

Appl. No. : 09/698,489
 Filed : October 26, 2000

REMARKS

A. Introduction

Applicant respectfully requests reconsideration and allowance of this application. Claims 1, 7, 10, 62 and 66-129 are pending in the application. The Examiner has rejected Claims 1, 7, 79-89, 94, 96, 98-107, 111, 113-121, 126, 128 and 129. The Examiner has indicated that Claims 62 and 66-78 are allowed. The Examiner has also indicated that Claims 10, 90-93, 95, 97, 108-110, 112, 122-125 and 127 would be allowable if rewritten in independent form.

Applicant has amended Claims 1, 82, 99 and 114 to further clarify Applicant's claimed invention. Applicant's claim amendments are shown on the pages above following the heading AMENDMENTS TO THE CLAIMS. On these pages, the [[deletions are double bracketed]] while the insertions are underlined.

Applicant submits that this application is now in condition for allowance, and Applicant earnestly requests such action. Below, Applicant addresses each of the Examiner's reasons for rejection.

B. All Claims are Patentable Over the Cited References Merlette

The Examiner rejected Claims 1, 7 and 79-81 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,959,073 to Merlette. Applicant respectfully submits that these claims, as amended, are allowable over Merlette.

In rejecting claims under § 103, the Examiner bears the initial burden of presenting a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). To establish a *prima facie* case of obviousness, the following criteria must be met. There must be some suggestion or motivation found in the prior art, either in one or more references or in the knowledge generally available to one of ordinary skill in the art, to modify a prior art reference or to combine reference teachings to meet the limitations of the claim. Further, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991); M.P.E.P. § 706.02(j). "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in

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light of the teachings of the references." *Ex parte Clapp*, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. & Inter. 1985); M.P.E.P. § 706.02(j).

Various preferred embodiments of the present application define, *inter alia*, a prosthetic foot comprising a foot plate element, at least one ankle plate element, and an ankle block sandwiched between the ankle plate element and the foot plate element. The foot plate element comprises a resilient material capable of flexing along its length. The ankle block comprises a relatively soft, compressible material. The foot plate element and the ankle plate element are not in direct contact with one another, and the ankle block provides substantially the sole means of support and connection between the foot plate element and the ankle plate element. At least one opening preferably extends at least partially through the ankle block.

By contrast, Merlette discloses a foot prosthesis comprising an elongate composite main member. The main member has a leg section and a toe section. One end of the leg section is adapted to be connected to an amputation socket. The other end curves smoothly forward through an ankle section into the toe section, and extends to a toe end. A heel member extends from the toe end rearwardly, generally along the toe section, and then diverges from the toe section and extends to a heel tip. The main member and heel member are preferably constructed of one piece, with continuous fibers of the composite material extending through the main member and around the toe tip and through the heel member. A resilient material, such as rubber, is bonded between the toe section and the heel member where the two are generally adjacent. The properties of the resilient material may be made adjustable by the wearer where the toe section and heel member diverge.

Start → Merlette does not disclose or suggest, *inter alia*, a prosthetic foot comprising a foot plate element, at least one ankle plate element, and an ankle block sandwiched between the ankle plate element and the foot plate element, wherein the foot plate element and the ankle plate element are not in direct contact with one another. Referring to Figure 1 and column 3, lines 58-63 of Merlette, "Main member 10 is of single piece composite construction and preferably member 20 is constructed as a continuation of main member 10 so that the leg section 12, ankle section 14, toe section 16 and heel member 20 are formed as a single piece." Thus, the toe section 16 and the heel member 20 are connected to one another at the toe tip 18.

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There are numerous advantages of a prosthetic foot having a foot plate and an ankle plate that are not in direct contact with one another. For example, such a prosthetic foot acts as a fully functional ankle. It is able to flex in all directions just as a natural human ankle does.

Since Merlette does not disclose or suggest a prosthetic foot having a foot plate and an ankle plate that are not in direct contact with one another, Applicant respectfully submits that independent Claim 1 is patentable over Merlette. Dependent Claims 7 and 79-81, which include the features of independent Claim 1, each recite additional features of particular advantage and utility. Moreover, these claims are allowable for substantially the same reasons presented above. Merlette does not disclose or suggest all of the limitations of Claim 1, let alone the unique combinations of features recited by Claims 7 and 79-81. Accordingly, Applicant respectfully requests that the Examiner withdraw these rejections.

Harrington

The Examiner rejected Claims 82-89, 94, 96, 98-107, 111, 113-121, 126 and 128-129 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 2,357,893 to Harrington. Applicant respectfully submits that these claims, as amended, are allowable over Harrington.

Various preferred embodiments of the present application define, *inter alia*, a prosthetic foot comprising a foot plate element, at least one ankle plate element disposed above the foot plate element, and at least one ankle block positioned between the ankle plate element and the foot plate element. The foot plate element is formed of a resilient material capable of flexing along its length. The ankle block has a thickness of no less than about one-half inch over an entire length thereof, and the ankle block includes at least one opening extending at least partially therethrough.

Various other preferred embodiments of the present application define, *inter alia*, a prosthetic foot comprising a foot plate element, at least one ankle plate element disposed above the foot plate element, and at least one ankle block positioned between the ankle plate element and the foot plate element. The foot plate element is formed of a resilient material capable of flexing along its length. The foot plate element and the ankle plate element comprise discrete elements, and the ankle block includes at least one opening extending at least partially therethrough.

Various other preferred embodiments of the present application define, *inter alia*, a prosthetic foot comprising a foot plate element, at least one ankle plate element disposed above

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the foot plate element, and at least one ankle block positioned between the ankle plate element and the foot plate element. The foot plate element is formed of a resilient material capable of flexing along its length. At least a forward extent of the ankle plate element is spaced from the foot plate element, and the ankle block includes at least one opening extending at least partially therethrough.

By contrast, Harrington discloses an ankle joint for artificial limbs comprising a leg member and a foot member 6. A flat end wall 2 of the leg member 1 includes an attached metal plate 3. Similarly, a flat upper surface 7 of the foot member 6 includes an attached metal plate 8. A front supporting post 12 and a rear supporting post 13 partially fill a space between the metal plates 3, 8. The posts 12, 13 are constructed of rubber, and the front post 12 includes a reinforcing core 14. As the wearer of the ankle joint of Harrington walks, compression and tension in the posts 12, 13 simulates the flexing of a natural ankle.

Harrington does not disclose or suggest a prosthetic foot comprising a foot plate element that is formed of a resilient material capable of flexing along its length. Rather, the foot plate 8 of Harrington is rigid and designed to provide a firm surface against which the posts 12, 13 deform as the wearer walks. For example, Figures 1, 3 and 4 of Harrington illustrate the ankle joint at various phases of the wearer's gait. At no point in the sequence does the foot plate 8 appear to flex. Furthermore, Harrington states that the foot plate 8 is constructed of metal. (See col. 2, ln. 55). Metals typically are not flexible unless they are sufficiently thin. As Figures 1-4 illustrate, the foot plate 8 of Harrington is not very thin. Harrington also discloses that the foot plate 8 "may be made of plastic or any other suitable composition having the necessary *strength and rigidity*" (col. 5, lns. 19-21).

There are numerous advantages of a foot plate that is capable of flexing along its length. For example, the flexible ankle plate simulates the natural flexing at the forefoot portion of a natural human foot. Thus, the flexible ankle plate in combination with a compressible ankle block very accurately imitates the flexure characteristics of a real human foot.

Since Harrington does not disclose or suggest a prosthetic foot comprising a foot plate element that is formed of a resilient material capable of flexing along its length, Applicant respectfully submits that independent Claims 82, 99 and 114 are patentable over Harrington. Dependent Claims 83-89, 94, 96 and 98, which include the features of independent Claim 82, dependent Claims 100-107, 111 and 113, which include the features of independent Claim 99,

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and dependent Claims 115-121, 126, 128 and 129, which include the features of independent Claim 114, recite additional features of particular advantage and utility. Moreover, these claims are allowable for substantially the same reasons presented above. Harrington does not disclose or suggest all of the limitations of Claim 82, Claim 99 or Claim 114, let alone the unique combinations of features recited by Claims 83-89, 94, 96 and 98, or Claims 100-107, 111 and 113 or Claims 115-121, 126, 128 and 129. Accordingly, Applicant respectfully requests that the Examiner withdraw these rejections.

CONCLUSION


For the reasons presented above, Applicant respectfully submits that this application, as amended, is in condition for allowance. If there is any further hindrance to allowance of the pending claims, Applicant invites the Examiner to contact the undersigned.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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Dated: 9-9-03

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